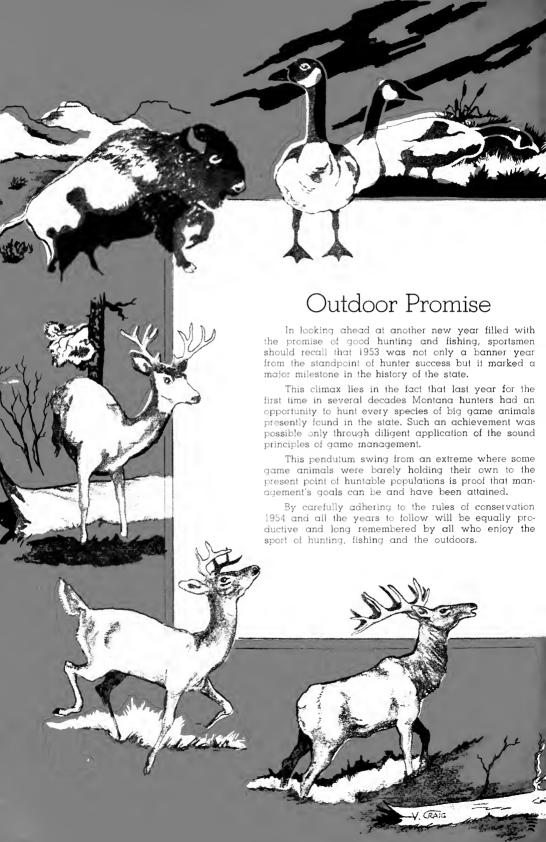
TANA Wildlife





MONTANA FISH AND GAME DEPARTMENT

Official



Publication

State of Montana

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MONTANA FISH AND GAME COMMISSION

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The Commissioner's Message

Conservationists (like heroes) are made—not born. For people generally are wasteful, particularly in the use of natural resources. One look at some streams, soil, forests and wildlife in many areas will confirm this.

We, therefore, face a serious responsibility in teaching and developing an awareness about the conservation of these natural resources among our people.

Such an attitude can best be developed in the young active minds of our school children, and over the state, Montana schools are incorporating conservation courses into their curricula. But in addition to this general inclusion, there is also need for short, stimulating programs for presentation in school rooms by various conservation agencies.

This type of program which will serve to create additional interest in soil, water, forests, wildlife and even human conservation has been tried in some areas.

The success of these trial courses has been encouraging and this department now has plans to expand conservation education programs in cooperation with the state educational system.

7. W. Black

Montana Wildlife

Vol. IV

Marjorie Mitchell, Editor

No. 1

Vernon Craig, Artist

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Winter Issue - 1954

"Montana Wildlife," published quarterly, may be obtained free of charge by writing the Montana Fish and Game Department at Helena. Contents of this magazine may be reproduced in whole or in part if properly credited.

Our Cover

Dogs, which normally relish treeing any feline, really have a field day when taken on a mountain lion hunt. These big cats are perhaps one of the most difficult to find—but once found, they are one of the few species whose hide means profit to hunters. For in Montana, the Fish and Game Department pays \$50.00 per pelt.

Because lions are classed as predators, there is no season on them although winter is the best time to hunt them when deep snow makes tracking easier and they are forced to follow game down from higher elevations.

PHOTO CREDITS:

Cover and inside front cover drawing, Pages 12-13, 18-19, 20 and 21 by Vern Craig; Photos on pages 4, 5, 6, 7 and 25 by Hector J. LaCasse; Pages 8, 14-15 by Ken Thompson; Page 10 (elk) by Ken Rohan, U. S. Fish and Wildlife Service; Page 11 by Jesswine of Bozeman; Page 16-17 by Joe Townsend; Page 22 and 23 by Bob Cooney; Page 24 by C. R. Hungerford.

Known in various localities as cougar, deer tiger, Mexican lion, panther, painter, mountain lion and puma, this second largest member of the North American cat family ranges from southern Canada to the southernmost point of South America and was once found in great numbers east of the Rocky Mountains.

Large specimens measure up to nine feet including a powerful three-foot tail and weigh approximately 200 pounds.

EDITORIAL:

MONEY IN THE BANK

Economy and savings—once the sign of a wise and well-run business—have apparently become symbols of extravagance and poor management when it comes to certain opinions on the financial condition of the Montana Fish and Game Department.

Continued and increasing comments in the spoken and printed word on the subject of the financial reserve indicates that at least some people believe a state agency should operate on a shoestring.

Any intelligent person who decries the savings of a self-supporting agency such as the Fish and Game Department must have questionable motives behind his talk of waste and inefficiency. Covetous and hungry eyes are constantly cast upon this reserve by persons who would turn a back-log of conservation funds into channels to fit their own selfish desires.

The facts are that this so called "financial reserve" which now approximates a million dollars is not a reserve at all but represents the amount of income taken in during one year which is necessary for the following year's operations.

Fish and Game operations which in the past have been based on anticipated income from the current year's sale of licenses can now be planned largely on the basis of last year's income or money in the bank.

Is that bad business? Ask any merchant or business executive!

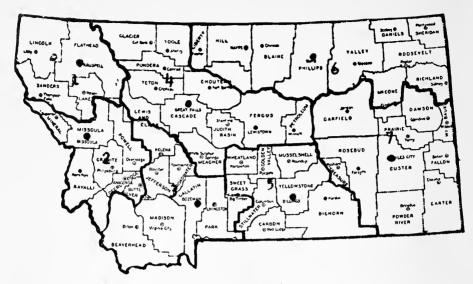
Then why all this talk about big incomes? Many cities and municipalities in this state annually receive amounts in excess of the income of the Fish and Game Department — and this for local needs, not state-wide work!

Realizing the interest in this subject, and desiring to make known the facts as well as the thinking behind the administration of fish and game finances, this magazine will carry a detailed financial account of this department's activities in the next issue since our fiscal year ends in April.

This department is entirely supported by the dollars of hunters and fishermen — it has money in the bank.

Is that bad?

Think it over.



Montana's Warden Supervisor Districts and Headquarters
District 1, Kalispell District 2, Missoula District 3, Bozeman
District 4, Great Falls District 5, Billings District 6, Malta District 7, Miles City

WARDEN DISTRICTS OF MONTANA

Montana's system of game warden supervisor districts set up in 1946 was completed during the past summer when Districts Five and Seven were added to the five districts already in operation. These last two authorized districts, located in the southern and eastern portions of the state have re-distributed the workload in an area where both hunting and fishing pressure have increased sharply in recent years.

The Montana Fish and Game Department's staff of specially trained deputy game wardens and supervisors currently totals 58. On the following pages is presented a brief introduction to the seven supervisors, the districts in which they serve (outlined in the accompanying map) and the 51 Deputy Game Wardens who assist them and who are primarily responsible for the enforcement of the state's fish and game laws.



District 1
ROSS WILSON
Kalispell

DISTRICT ONE

Headquarters: Kalispell — District Supervisor: Ross Wilson.

Area: Lincoln, Flathead, Sanders, Lake and portions of Powell Counties.

Deputy Game Wardens:

reputy dame wardens.	
A. H. Cheney	Thompson Falls
Ray Dupler	Libby
Louis J. Haverlandt	Eureka
O. J. Nollar	Polson
Lawrence Deist	Kalispell
Vernon Friend (Trapper)	Kalispell
R. H. Lambeth	Polson
Edwin M. Sager	Kalispell

District I was the first activated under the current system with Ross Wilson appointed its first (and present) supervisor. The terrain of the area is extremely mountainous and heavily wooded, containing nearly every species of Montana's big game animals except the prairie antelope. This district is also noted for the largest populations of grizzly bears in the state.

Here, too, are found the haunts of the native black spotted trout as well as excellent habitat for large numbers of pheasants and many species of migratory waterfowl.

Currently game law enforcement problems have increased here due to influxes of transient dam workers.

DISTRICT TWO

Headquarters: Missoula — District Supervisor: Clyde P. Howard.

Area: Mineral, Missoula, Powell, Granite, Ravalli, Deer Lodge, Silver Bow and portions of Beaverhead Counties.

Deputy Game Wardens:

Marion R. Ammerman	Superior
Howard Larsen	
Robert Miller	Missoula
Roy Thompson	Greenough
Lester B. Barton	Deer Lodge
Stuart P. Markle	Anaconda
Courtney L. Taylor	Hamilton
William E. Schultz	Wisdom
D. Pat Couvillion	Butte



District 2
CLYDE HOWARD
Missoula

In most respects, District 2 is comparable to District 1, containing the same species of game animals and the same type of terrain, requiring similar methods in handling problems of law enforcement.

Here fishermen will find excellent trout fishing in the upper reaches of Rock Creek, the Blackfoot and Bitterroot rivers. Georgetown Lake, located near Anaconda, is one of the most heavily fished areas in the state and the Clearwater chain of lakes is noted not only for its fine fishing spots but also for its scenic beauty.

All of Montana's native upland game birds are found here and in addition, large numbers of ringnecked pheasants thrive in the irrigated portions of the Bitterroot Valley. Most species of big game animals are found throughout the area, including large numbers of moose in the Big Hole basin.

DISTRICT THREE

Headquarters: Bozeman — District Supervisor: Gene Sherman.

Area: Madison, Jefferson, Broadwater, Gallatin, Park and portions of Lewis and Clark, Beaverhead, and Sweet Grass Counties.

Deputy Game Wardens:

John F. Burke	Livingston
William Eckerson	Helena
Henry E. Preshinger	Whitehall
I. L. Todd	Ennis
L. C. Clark	Bozeman
Wayne M. Fitzwater	Dillon
Kenneth Sears	West Yellowstone
Ralph O. Cooper	East Helena
F. Dunkle	Bozeman

District 3
GENE SHERMAN
Bozeman



Representatives of all of Montana's big game species are located in this district, including bison which were hunted with special permits for the first time in 69 years during the past hunting season. Here, too, are the largest moose populations in the state. Great numbers of elk are harvested by Montana hunters when weather conditions force the northern Yellowstone herd to drift and migrate from their sanctuary in Yel-

lowstone Park to lower elevations outside the Park boundaries. With this hunt are attendant problems of law enforcement resulting from hunter concentration.

The greatest number of tourist or non-resident fishing licenses are consistently sold in this district year after year due to the excellence of the Madison River, and its proximity to Yellowstone Park which attracts hundreds of thousands of visitors from all parts of the nation each summer. Other worthwhile trout fishing streams here are the Beaverhead and Gallatin Rivers.

DISTRICT FOUR

Headquarters: Great Falls — District Supervisor: M. J. Watt.

Area: Glacier, Toole, Pondera, Teton, Cascade, Meagher, Judith Basin, Fergus, Petroleum and portions of Chouteau and Lewis and Clark Counties.

Deputy Game Wardens:

K. O. FallangWhite	Sulphur Springs
Charles A. Loberg	Stanford
Ray L. Somers	Conrad
Donald L. Wright	Browning
Thomas R. Hay	Great Falls
Paul K. Mihalovich	Āugusta
Waldo Vangness	Lewistown



District 4 M. J. WATT Great Falls

The terrain of this district is classified as an intermediate type because of its mountainous western portion which falls away to prairies in the east. Along the eastern slopes of the Continental Divide in this district is the largest herd of native elk in the state. These animals utilize the Sun River Game Range during the winter months and migrate in the spring into the South Fork of the Flathead. A similar winter elk range is currently being developed in the

Belt Mountains on the upper Judith River. Other important herds in this district are found in the Highwood area and near Adell between the Gates of the Mountains and Holter Dam

Important pheasant hunting areas as well as good waterfowl breeding habitat is found in Pondera, Judith Basin and Fergus Counties of this district. It also contains many thousands of miles of good fishing waters, most important of which are the Missouri and Smith Rivers and their watersheds, as well as the Milk River and its forks in Glacier County.

DISTRICT FIVE

Headquarters: Billings — District Supervisor: Jack Kohler.

Area: Wheatland, Golden Valley, Musselshell, Stillwater, Carbon, Yellowstone, Big Horn and portions of Sweet Grass Counties. Deputy Game Wardens:

Clyde Christensen	Columbus
Frank Starina	Hardin
Lawrence Taylor	Billings
Raleigh Shields	Roundup
Vernon Waples	Red Lodge
G. O. Johnson	Harlowton

District 5
JACK KOHLER
Billings



The vast land areas which now constitute Districts 5 and 7 were formed in August and Septemebr of last year. The new division allows greater concentration of effort in all districts, fewer miles for a single warden to patrol and, most important, makes a better balar ce in Montana's game law enforcement program in an area utilized by sportsment of one of Montana's largest cities.

Although this district is primarily prairie country, all species of the state's big game animals are found here. Some of the most important

antelope ranges of Montana are located in this district and a few elk are found in the western portion. Introductions of mountain sheep and mountain goats have been highly successful and huntable populations of these animals may be expected in future years.

Sharp Tail, Franklin's, Blue and Ruffed Grouse, as well as Sage Hens, are found in this district. Good pheasant hunting areas are located along the Yellowstone and Big Horn Rivers—streams which also provide fishermen with well-filled creels.

DISTRICT SIX

Headquarters: Malta — District Supervisor: H. C. Friede.

Area: Liberty, Hill, Blaine, Phillips, Valley, Daniels, Sheridon, Roosevelt, Richland and portions of McCone and Chouteau Counties. Deputy Game Wardens:

Cecil W. Gilmore	Plentywood
J. W. Cloud	Wolf Point
Harold Gartside	Sidney
Peter F. Quiring	Fort Peck
Otto Kebschull	Havre
Fred DesRosier	Malta



District 6 H. C. FRIEDE Malta

Traditionally, this prairie area is known as the "Hi-Line" and was the second warden district to be set up in Montana with H. C. Friede as its first and present supervisor.

Elk have been introduced at the Fort Peck Game Range and in the Bear Paw Mountains and whitetailed deer are hunted in the Missouri River Breaks and the tributaries of the river east of the Fort Peck dam. Occasionally, during severe winters, large herds of antelope migrate into the area from Canada and the district has considerable numbers of native antelope.

Native game birds found in this district include the Sharp Tail Grouse and Sage Grouse as well as huntable populations of pheasants along the Milk River and the lower Yellowstone River in Richland County. Migratory waterfowl from the Central flyway find excellent habitat and breeding grounds in the numerous potholes as well as the five Federal waterfowl sanctuaries of this district.

The state's only pike fish cultural station is located in Phillips County, 20 miles northeast of Malta.

DISTRICT SEVEN

Headquarters: Miles City — District Supervisor: Orville Lewis.

Area: Garfield, Rosebud, Treasure, Powder River, Carter, Custer, Fallon, Prairie, Dawson, Wibaux and portions of McCone Counties. Deputy Game Wardens:

John R. Cook	Glendive
George S. Hollibaugh	Baker
John B. Nicolay	Miles City
William S. Malloit	Forsyth
Warren N. Linville	Broadus
Asa S. Rogers	Jordan





This district, established in September, 1953, is located on the prairies of southeastern Montana and contains some of the most important antelope ranges in the state. Mule deer along the Tongue River and Powder River drainages also afford good hunting for Montana sportsmen.

Along its northern boundaries, in the Missouri River Breaks, is a thriving plant of mountain sheep. Sharp Tail and Sage Grouse are hunted every autumn in this district and the only federal warm water fish cultural station in the state is located at Miles City, district headquarters.



PERMIT

No 223

HUNTING AND TRESPASSING PERMIT ISSUED TO
NAME DE DE DES L'OF CREEK
FOR THE PERIOD BEGINNING Oct, 16 53

You hereby agree for the privilege of hunting on what is known as the Ox

You hereby agree for the privilege of hunting on what is known as the Ox Bow Ranch owned by Irvin H. Rieke to hunt only in the area described to you on the issuance of this permit. You further agree to respect all fences, and the opening and closing of gates and to exercise care in the handling of fire arms and exercise extreme care that no livestock is shot or molested in any manner and further that should you witness or have cause to suspect that others are in violation of the above that you will immediately notify the undersigned.

It is further agreed that no hunting will be done from automobiles or vehicles and that the parking of such must be on the designated roads and before leaving the ranch you will give notice to the undersigned that you have completed your punt and are leaving the property.

Applicant

Owner or Agent

Montana Sportsmen's Projects

(Seventh in a Series)

There may be many ways of untying the knotty problem of landowner-sportsmen relations but these methods are not always apparent. As in most problems, this one hinges on human nature. A small percentage of hunters fail to consider the rights of the landowner on whose property they would hunt. A small percentage of the ranchers and farmers fail to realize the very real need of city folks to get out in the open — stretch their legs and enjoy Montana's outdoors. The result: Hunting restrictions and hard feelings.

One Montana rancher-sportsman who worked out his own answer to the problem may have hit upon a guide that could open thousands of additional hunting acres to Montana sportsmen.

Irvin H. Rieke, owner of the Ox Bow Ranch on the Missouri River near Wolf Creek, is a most ardent sportsman. His trophy room would make many museums green with envy as he has hunted from the frozen wastes of the northland to the dank jungles of the Dark Continent of Africa. And being a hunter, he likes to have others have an opportunity to hunt — but being a rancher, he wants his livestock and property protected.

Finally, after struggling with the problem for some years, he hit upon what seemed to be a logical solution. Hunters who were good enough sportsmen to come to his house and get a written permit would be allowed to hunt. Those who were unwilling to show this little courtesy would not be permitted to hunt.

The permit (portions of which are reproduced on the opposite page) was printed at Mr. Rieke's own expense. It is graphic evidence that the sportsman will hunt in a prescribed area and exercise care in the handling of firearms. In obtaining one of these permits, the hunter also agrees to respect all fences and the opening and closing of gates.

For these few courtesies which any hunter should follow on any land, the sportsman is given an opportunity to hunt the Ox Bow Ranch.

Last year, almost 100 permits were issued and a high percentage of the permit holders obtained deer.

Mr. Rieke reports "... the hunter cooperation was excellent, to my knowledge there were no violations of the agreement, the fences and gates were left in order and no livestock were shot."

On the sportsmen's side, they had a good place to hunt, knowing they were welcome and in several instances, Mr. Rieke and his men helped pack out the hunter's game and offered helpful hunting suggestions.

This is the kind of relationship that strengthens the friendliness once so characteristic of the Old West.

It is an excellent example of a project that might well be tried in other areas.

DEALER'S LEDGER

FISH AND GAME DEPARTMENT
HELENA, MONTANA

NAME MISCELLANEOUS	REVENUE
TOWN	***************************************
COUNTY	

KIND OF CONFISCATIONS LICENSE SALE OF FISH & MEATS # 3 PAGE 1

DATE

LICENSE NUMBER	RECEIPT NO.	CHARGES	CBEDITS	BALANCE	
F 62 E. BROOK TROUT	5106 \$9.83	9.83		9.83	1 2
L FOR JUNE, 1953 F ONE DEER	5168	5.00	į.	14.83	3
F ELK & DEER	5212	25.00	1	39.83	.5

jun 8 53 SALE OF JUL 8 53 SALE OF JUL 15 58 SALE OF TOTAL FOR JULY, 1953 AUG 5 53 SALE OF ONE DOE DEER AUG 5 53 SALE OF CONFIS. GAME AUG 14 58 SALE OF ONE BEAR AUG 20 58 SALE OF 30 TROUT TOTAL FOR AUG, 1953 SEPT 1 53 SALE OF 1 BUCK DEER SEPT 1 53 SALE OF 23 DEER SEPT 14 53 SALE OF ONE ANTELOPE SEPT 14 53 SALE OF ONE DEER TOTAL FOR SEPT. 1953 SALE OF 8 ANTELOPE OCT 1 53 SALE OF 2 DEER OCT 8 53 SALE OF ONE ANTELOPE OCT 9 53 SALE OF 2 CALF MOOSE OCT 16 93 SALE OF 1 PHEASANT & 1 OCT 23 93 SALE OF 1 DEER OCT 26 93 SALE OF 1 ANTELOPE OCT 28 93 SALE OF 1 DOE ANTELOPE OCT 28 3 SALE OF 3 DEER OCT 28 \$3 SALE OF 1 BLUE GROUSE OCT 28 43 SALE OF ONE DOE DEER TOTAL FOR OCT. 1953 NOV 9 5 SALE OF 1 BUCK DEER

NOV 9 58 SALE OF 1 DOE DEER



What Happens to Confiscated Game Meat?

When wild birds, game, fish or fur bearing animals are held as evidence in a case involving the violation of a Fish and Game law, what disposition is made of this "evidence" after the case has been completed?

As in all other activities of the Fish and Game Department, the law is auite specific in such matters.

If the court holds that no violation has occurred, all articles held as evidence must be returned intact.

However, if the court finds the accused guilty, then certain definite procedures must be followed in disposing of the birds, animals, or fur bearers involved in the legal action.

According to Montana Fish and Game Codes, all edible or usable portions of such confiscated articles must be sold at public auction after proper notification in certain prescribed publications. Such notice must appear in a newspaper of general circulation in the county where the sale is to be held at least five days and not more than thirty days prior to the auction.

Accurate records of every arrest, a description of the violation and the disposition of and amounts received from the sales of confiscated property are kept in the Helena offices of the State Fish and Game Department.

Many Montanans watch for such sales of confiscated game meat to purchase their deer, elk, antelope or moose if they have been unsuccessful in their hunting or if they have been too busy to go out into the field before the season closes. Although the sport of the hunt is missing by merely buying the meat, in most cases such purchases are cheaper by almost half than a hunting trip would be.

Prices vary with the bids for each animal but wardens have estimated that an average of 15 cents per pound is paid for deer, 20 cents for elk, 15 to 25 cents for antelope and 20 to 40 cents for moose, depending upon which quarter is being offered for sale.

But what does a game warden do if John Motorist rounds a corner to confront an unexpected buck deer or a doe with fawns? Much as the motorist may swerve to keep from hiting the animal, accidents are often unavoidable. Many game animals and birds as well as some fur bearers are killed in this way every year.

Clearly there is no premeditation on the part of the driver who has tried not to injure the wild animal, no violation of game laws and consequently no reason for confiscation.

But some disposition must be made of wild game killed in this way, so edible portions are donated to charitable institutions. Over a period of years, the State of Montana has donated many thousands of pounds of game meat to orphan homes, school lunch programs, Salvation Army posts and similar organizations. Confiscated hides and furs or those obtained from animals killed through accident are sold at public auction once a year.

Recently another type of program has been initiated in Montana whereby schools are allowed to purchase game meats for their lunch programs after surplus animals in national or state preserves are marked for harvest.

The schools indicate how much meat they will be able to use and it is then offered to them on a contract basis. Thus schools are able to supplement their regular menus with lower cost and nutritionally excellent meat.

In disposing of confiscated or accidentally killed waterfowl, a slightly different procedure is followed. Because these birds are protected by federal law, they can never be sold under any circumstances and must always be donated to a charitable institution.

Montana's revenue from sales of confiscated fish, game and fur bearers is negligible as compared with income from other sources but an average of about \$3,000 is recorded annually.

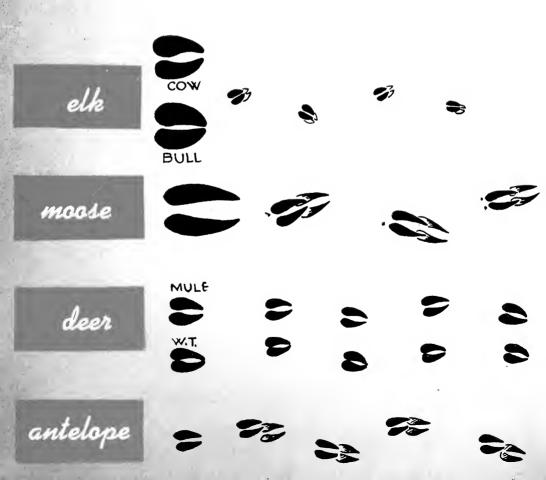
When the heavy doors of a cold storage plant are opened for the auctioning of accumulated game meat confiscated by the Montana Fish and Game Department, bidders are quick to take advantage of this method of obtaining a good supply of wild meat. Auctions are also held periodically to dispose of hides and furs.

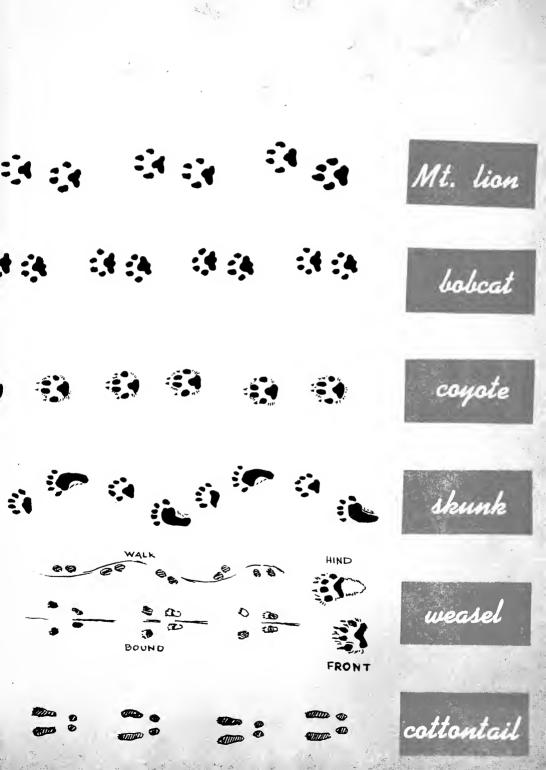


TRACKS ACROSS THE SNOW

That fresh fall of snow last night has today become a new page in the history book of the outdoors and across its clean white surface can be seen the tiny trails of birds and small animals, the tell-tale paths of the bigger game—occasionally a tragedy—but always an interesting pattern in the wandering search for food or shelter.

Anyone can read these signs and interpret the story written across the snow pages if they can identify a few of the more common animal tracks. Here are a few, ranging from the majestic big game found in the deep woods to the familiar cottontail rabbit, which will assist in the identification of those tracks across the snow.







Conservation Is For Children Too!

On the premise that one of the best places to plant the concepts of conservation is in the flexible mind of a child, the Montana Fish and Game Department two years ago instituted a course covering the fundamental principles of wildlife management for presentation in grade and junior high school rooms.

This program, repeated in the Lincoln County schools this year and specially requested by the Flathead Lake Wildlife Association for the Kalispell schools, is a cooperative effort of teachers, county farm agents and the Fish and Game Department.

Ken Thompson, Director of the Division of Education and Information, and his assistant Vern Craig, lecture children from the fifth grade through junior high school. They supplement their material with visual aids which include mounted specimens of upland game birds and waterfowl, examples of big game horns and antlers, illustrative literature and movies on wildlife.

Their three-hour talks are prepared to present the important lessons expressed in conservation's policy of "wise use" at a level which can be grasped easily by the age group in attendance.

In the Lincoln County area, the course has been presented at Libby, Fortine, Eureka and Troy with an estimated attendance of over 600 children from 9 to 15 years old. Many of

those attending were brought in from outlying rural schools to the central city points where the course was being held.

These children, many of whom live on or near ranches, can readily understand the complex structures of wildlife management when such practices are compared with the operation of a farm or a ranch. Fish and game, they are told, are like a crop which must be protected and cared for just like hay, grain or livestock in order to realize the best harvest at a later date.

In easily understood terms, the youngsters are told exactly what the natural resources of Montana are,

why they are perhaps more valuable today than at any other time in history, and the interdependence of these resources on each other.

The course has proved so successful in Lincoln and Flathead Counties that the Montana Fish and Game Department hopes to train deputy game wardens, biologists and other field men to present similar courses in other parts of Montana.

For by laying the foundations of conservation education in the minds of future generations, Montana's wealth of all resources will receive the more careful attention and consideration which it deserves.

Vernon Craig (opposite page) and Ken Thompson of the Fish and Game Department (below right) were assisted by County Agent Thad Wojciechowski (below left) in presenting a conservation course in Lincoln County. The course proved so popular, it was presented at Kalispell by special request and plans are now underway to train other departmental personnel for similar programs in other parts of the state.





The Fish and Game Department's recent responsibility in state-wide beaver management has resulted in an intensified program incorporating a relatively new wildlife technique—the aerial beaver survey.

With the passage of Senate Bill No. 92, Mentana's 1953 legislature granted authority to the State Fish and Game Commission "... to declare an open season on beaver under such rules and regulations as it shall prescribe ..." and thereby, for the first time in over fifty years, made the Commission responsible for the management of this historic fur animal. Previous authority was limited to issuing beaver trapping permits to land owners for alleviation of beaver damage.

The present law, in addition to maintaining the old land-owner permit system, authorizes open seasons on public lands and on private lands with the land owner's permission.

In recognition of this responsibility, the Fish and Game Department has initiated, through its fur biologists, an extensive program of beaver management. This program, designed to fill the needs and serve the interests of all Montanans, can be formulated only through proper analysis of pertinent auantitative information.

The analysis and evaluation of information is one of the most important jobs of the trained biologist. When, pertaining to beaver, information must be evaluated for its bearing on the various values, both positive and negative, associated with this animal.

Positive values include watershed, soil and water conservation; fisheries propagation; ex-

pansion of big game habitat, aesthetic values and commercial fur. (As a harvestable resource, the beaver, in terms of commercial fur, is one of the most important animals in our state.)

Nuisance beaver in agricultural operations and the flooding of roads and timber lands are examples of negative values. Although analysis and evaluation are important, often the gathering of sound quantitative information is the biologist's most difficult task.

Quantitative information concerning beaver populations, trends and distribution is of particular importance to beaver management. This is redily recognized when one begins to think in terms of harvests or open seasons.

Controlled harvest, when properly used, is one of the primary tools of management. To properly set up a season, certain information is of vital importance—chiefly information concerning population size, trends and distribution.

The aerial beaver survey is a modern census technique used in several states to obtain the necessary population information for beaver management.

The technique used to make the survey varies somewhat with the type of stream. In general, however, the plane is flown slightly to the side and between 300 and 800 feet above the stream at a rate of approximately 70 mph.

Small, meandering streams, which are often covered by over-hanging brush are avoided. Areas of multiple channels, such as are found in the Yellowstone River, are circled until

entire coverage is obtained. The observer labulates beaver "caches" other "fresh" beaver structures and landmarks (bridges, towns, etc.); the time of each observation is also recorded. The census is thus based on the observation and tabulation of visible structures constructed by beavers.

Although structures such as "fresh" dams and lodges are indicative of beaver presence, the cache (a stockpile of vegetation, mostly brush and other woody plants, collected in the fall for a winter's food supply) is the best known indication of a beaver colony. (Beavers, particularly in the fall, are usually assembled in "colonies" or family groups.)

A colony may have many dams, lodges may be absent or well-concealed, but, with rare exception, each colony will construct one (and only one) cache. Cache size varies from a pile of material a few feet in "diameter" to large storages over twenty-five feet wide and seventy feet long. They are constructed in the water; and when not concealed by over-hanging vegetation, are easily seen by an aerial observer.

Since each cache represents a colony of beaver and the number of stream miles between landmarks can be determined easily from large-scale maps, the information obtained can be expressed in stream miles per beaver colony.

This figure, entirely adequate for population trends and distribution determinations, is, however, not the only information obtainable through aerial survey. By using a figure denoting average beaver numbers per colony findings of various research workers indicate an average of 5.0 to 5.5 beavers per colony) beavers per mile of stream can be estimated for a given area.

In addition, vegetative types and beaver colonies can be plotted on aerial photographs by trained observers. All of the information derived from these procedures and the consequent data is of high value in the formulation of comprehensive beaver management for Montana.

The state-wide aerial beaver study, as conducted by Montana Fish and Game Department personnel last fall, is neither an untried nor a haphazard technique. Various states have used and tested this method, and consequently adopted it as a standard beaver management procedure.

A few deputy game wardens in Montana have previously used aerial survey to determine population size and distribution in the course of beaver damage control, and have found the method very satisfactory.

The present state-wide survey, in which representative streams throughout the state were flown to obtain beaver population figures for comparison with future aerial counts over these same streams, is sponsored and directed by the Fur Section of the Wildlife Restoration Division.

Department pilots fly the Piper "super-cub" airplanes, deputy game wardens and biologists serve as observers.

By the use of such methods as the aerial survey in the formulation of a progressive management program, the Fish and Game Department will satisfy its responsibility in beaver management to the people of Montana.



SMOKING FISH IS EASY

For those Montana fishermen who won't let winter's ice and snow keep them from enjoying their favorite sport, this is the time of year to start repairing gear, moving shelters and choosing a spot along a lake or river which is open to winter fishing and where a good hole can be chipped in the ice.

In winter, Montana's most commonly taken fish are whitefish, trout and silver salmon but many of the so-called "warm water" fish should not be over-looked in the business of catching and eating.

For example, in eastern Montana waters, fishermen usually discard goldeyes which often bite before a hook reaches a depth frequented by perch or sauger. But properly prepared, goldeye caught in either summer or winter, becomes quite a delicacy according to many experts on fish dishes.

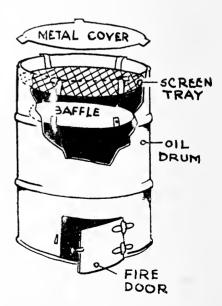
One of the best and tastiest ways to prepare these as well as most types of fish caught during the winter months is by old-fashioned home smoking.

The first step in getting any fish ready for smoking is either to scale it or dress it. Both methods of cleaning fish are simple and require no special equipment.

To scale a fish, grasp the fish by the tail fin and insert a sharp knife under the scales at the tail. Move the knife forward with a sawing motion and peel the scales off in strips. To dress a fish, cut it to the bone around the head and twist the head off. Next cut off the tail and other fins and finally, split the abdomen full length, remove vicera and wash the fish thoroughly.

When this first operation has been finished, cut large fish into chunks of about one-half to one pound each, keeping the pieces as uniform as possible.

The cleaned pieces then are placed in a salt brine for 24 hours. Brine is made by adding salt to cold water until it is of sufficient strength to float a medium sized chicken egg. Only the tip of the egg should be seen above the surface of the brine. Use enough brine to cover the fish to be cured.



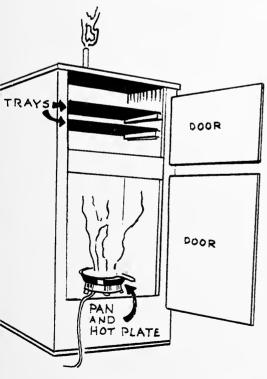
BARREL TYPE SMOKER

After the fish have been in the brine for 24 hours, they are removed and washed in clear water for a few minutes. Dry the fish off and place them in the smoker.

If a tray type is used, the tray should be oiled previously with lard to prevent the fish from sticking.

The fish are then cooked over a hot fire with little smoke for a period of two and one-half hours. The temperature in the smoker during this period is about 210°F. Dry aspen, apple, maple, white oak or hickory wood may be used.

After cooking, the hot fire is broken down and green wood is then used to build up a dense smoke. The fish are



CONVERTED ICE-BOX TYPE SMOKER

then smoked about one hour at a temperature ranging from 85° F. to 100° F. After smoking, do not pack the fish until thoroughly cooled.

Another method of smoking fish is with an old ice box. Remove the trays from the lower compartment and install them where the ice was formerly kept at the top. (That is where the fish will be smoked.) Heat comes from an electric hot plate in the lower compartment. Smoke is generated from sawdust in an old frying pan or other similar container placed on the hot plate.

A piece of one-inch water pipe is run through a hole bored in the top of the box for a "chimney." Be certain that the drain hole in the bottom of the box is open. Prepare the fish for smoking in this type of smoker as for the tray type.

Pre-heat the icebox and place the prepared fish on the trays in the upper compartment. Next, place the pan of sawdust on the hot plate. Keep the temperature in the ice box around 200 degrees or slightly under and smoke fish for 2½ hours.

When serving smoked fish, the true smokey flavor can be accentuated by heating in the oven. Place the fish on absorbent paper to catch any fat that may remain or in a shallow pan with a little water to prevent sticking.

The smoking process will have cooked the fish sufficiently so that only a short warming is necessary before serving the smoked delicacy as hors d'oeuvres or as a main dish to your family or friends.



Montana Fish and Game Department

By Bob Cooney, Director, Wildlife Restoration Division.

Old timers who hunted the Blackfoot-Clearwater region years ago spoke of the importance of the area as game country. With the coming of winter, elk moved down along the timbered slopes of the Blackfoot and Monture drainages. Others from the Upper Clearwater, pushed by deepening snows, drifted onto the area by way of the Cottonwood and Salmon Lake sidehills.

Deer, in large numbers, followed in their fall migration the same general pattern. Thus, by mid-winter, game was abundant on this critical range.

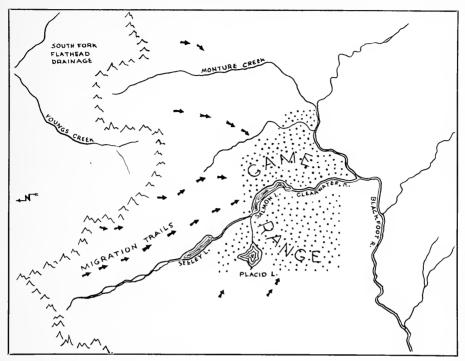
Prior to the purchase of the Boyd Ranch holdings by the Montana Fish and Game Commission, serious conflicts existed between livestock and big game use.

Numerous haystacks in this region were damaged by elk. Sportsmen from Missoula and elsewhere were spending many of their weekends aiding the ranchers and the Fish and Game Department with a stack-panelling program. This work resulted in some temporary relief but the problem was far from solved as the game animals were still plaqued with a lack of winter range.

The forest land in the higher mountains was covered with snow. The low country and exposed south slopes were either "out-of-bounds" as hay meadow or had been grazed during the summer months, leaving little for game.

This was the picture that confronted the Commission when the Boyd Ranch was offered for sale. It represented a piece of land amounting to approximately eleven thousand acres of private ownership and controling roughly forty thousand additional acres

NOTE: The sportsmen of the Western Montana Wildlife Association in Missoula presented the distinctive sign which graces the high lodgepole gate at the entrance to the Blackfoot Clearwater Game Range.



Sketch above shows general location of game range area in relation to the main drainages and migration trails,

of grazing land by lease. Its location was strategic as it lay at the confluence of the Blackfoot and Clearwater Rivers, thus controling much of the natural winter range of big game from a vast surrounding area. On November 28, 1948, it was purchased for wildlife purposes by the Fish and Game Commission with the aid of Wildlife Restoration funds.

Important benefits to wildlife have already been evident. Others are being added as the area is more completely developed. A major effort has been made to effect a maximum usage of this area by big game, particularly elk and deer.

The removal of several hundred

head of cattle and up to three bands of domestic sheep that formerly grazed there, has in itself caused a vastly increased supply of forage now available to game.

Baiting and herding have been used extensively during the more severe winters to move elk onto the game range. In this work bait lines were run as far as seven miles out through adjoining private lands. Elk were drawn along these lines by a liberal use of hay and concentrate.

As big game became accustomed to using the bait, the lines were gradually shortened from the far end until the elk were foraging upon the game range. In conjunction with the herding and baiting, haystacks along the migration routes were panelled so that they didn't distract from the drift of elk onto the range.

Hay Is Share-Crop

Hay for use on the bait lines has been raised upon the ranch meadows. It has been cut and baled on a share-crop basis, allowing an operator a share of the yield for carrying on the actual haying program.

The Department's share of this crop, in addition to its use on the bait lines, has been trucked to many points in the state for wildlife purposes.

Many tons have been used in emergency game feeding programs during severe winters in Western Montana and in the Gallatin Canyon. Much of the hay used in the elk traps in Yellowstone Park for trapping and transplanting purposes has also come from the Blackfoot-Clearwater Game Range.

In order that elk use of the lands now available might be further encouraged, elk trapped in surrounding areas and in Yellowstone Park last winter were liberated on the game range. Tag returns this fall indicated that a substantial number had remained in the area, several of which were taken by hunters.

The present plans for the area consider the entire game range open during the regular big game season. It is felt that summering of large numbers of game on the area would not be desirable as forage should be retained for the critical winter months.

The take by hunters is primarily from animals that have not migrated back into the higher summer range and represent but a small fraction of the herd depending upon the area for winter forage.

A portion of the leased lands lying in the northwestern corner of the range and known as the Blanchard Creek area has been authorized for a trade of use. A livestock operator, formerly running sheep in the Salmon Lake sidehills region adjoining the game range, has agreed to trade his use of this area for a comparable amount of range in the Blanchard Creek region.

In this way, the Salmon Lake sidehills—a region composed of a series of south slopes and benches and long considered some of the most important deer wintering grounds in



Fish and Game employees placing hay on bait lines in order to draw elk through adjacent privately owned lands into the game range.



White-tailed deer on Salmon Lake side hills, one of the most important segments of the Blackfoot-Clearwater Game Range.

Western Montana — were added to the game range.

The region on Blanchard Creek is of higher elevation and thus susceptible to deep snow. It is, therefore, of considerably less importance to wildlife.

Scientific Studies

The Blackfoot-Clearwater Game Range has been found an excellent location for intensive studies to gain necessary information leading to better game management. An example has been the cooperative program now being carried out regarding elk nutrition.

The Montana Wildlife Research Unit is cooperating closely with the Fish and Game Department in carrying out this work. Food trials simulating field conditions have been set up on the game range. A series of pens have been constructed in which elk are fed various diets, among which are: straight browse (willow, mountain maple, serviceberry, chokecherry, etc.), and native bunchgrass (from the Sun River and Blackfoot ranges.)

In addition, a mixture of the two types of forage and also a diet of straight meadow hay is being used. Conifers (principally Douglas fir and lodgepole) are being introduced into several of the diets this year. A periodic record is being kept of each animal's weight during the winter to determine gain or loss on the various diets.

Pounds of forage being fed per animal is recorded so that the actual daily intake can be determined for the various important forage plants. This information on pounds of food per animal per day will be of extreme importance in the determination of the proper stocking of elk on the big game ranges throughout the state.

A small number of cattle are being held in an adjacent pen and are also being studied in regard to forage consumption. Definite information on the comparative amounts of forage used by elk and cattle will be of importance in working out game management plans.

Special Training

Another of the many uses of the game range facilities is the newly inaugurated "In-Service Training" program conducted by the Department. Specialized training in different phases of fish and game management, research and education will be taught through the cooperation of Montana State University and Montana State College.

Using the large game range bunkhouse as the "schoolhouse," Departmental employees will learn new and better ways of conducting their work for the sportsmen of Montana.

In summary, the development of the Blackfoot-Clearwater Winter Range represents an effort to maintain a reasonable number of game animals in close proximity to important agricultural interests with a minimum of conflict.

Such an effort seems particularly timely in the light of the present day complexities of land use.

View of clk feeding pens. Here experimental work is being conducted to determine the forage requirements of this important big game species



A "NEW LOOK" IN UNIFORMS

The charging grizzly bear, long a symbol of the Montana Fish and Game Department, will soon appear as a shoulder patch on the new uni-

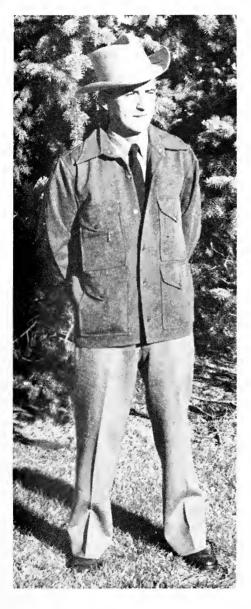
forms of deputy game wardens, biologists, fieldmen and administrative personnel (See illustration below).

Although Montana game wardens have worn uniforms in the past, this new field clothing is the first major change in style since 1946 and marks the first time that other department employees have been similarly outfitted.



The new regulation dress consists of a cruiser type coat of sage gray whipcord, officers' "pinks" type trousers, nickle gray poplin shirt, green nylon four-in-hand necktie, and is topped off with a three-inch brimmed western style hat.

In providing these new uniforms for department officials, Montana keeps pace with many other state conservation agencies which have similarly equipped their employees.



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